CONTENTS OF *ECOLOGICAL MODELLING*, VOL. 47

VOL. 47 NOS. 1/2 1 SEPTEMBER 1989

Special Issue

Microcomputers in Ecological Modelling:
a special issue dedicated to research, education and computer graphics

Edited by

E. Halfon

Editorial 3

Learning to simulate ecological models on a microcomputer
K.C. Ewel (Gainesville, FL, U.S.A.) 7

A report on some recent experiences in developing experimental software
M. Gatto and G. Guariso (Milano, Italy) 19

TIME-ZERO: the integrated modelling environment
T.B. Kirchner (Fort Collins, Co, U.S.A.) 33

Modelling for managers
W. Silvert (Dartmouth, N.S., Canada) 53

Spreadsheets, PC's, and the finite-difference solutions for ecological distribution
J.W. Brewer (Davis, CA, U.S.A.) 65

A model illustrating the environmental fate, exposure and human uptake of persistent organic chemicals
S. Paterson and D. Mackay (Toronto, Ont., Canada) 85

Exposure and ecotoxicity estimation for environmental chemicals (E4CHEM): application of fate models for surface water and soil
M. Matthies, R. Brüggemann, B. Münzer, G. Schernewski and S. Trapp (Neuherberg, Federal Republic of Germany) 115

Watershed acidification models using the knowledge-based system approach
D.C.L. Lam (Burlington, Ont., Canada), D.A. Swayne, J. Storey (Guelph, Ont., Canada) and A.S. Fraser (Burlington, Ont., Canada) 131

A computer program to display animations within the computer graphics HALO environment
E. Halfon and D. De Jong (Burlington, Ont., Canada) 153

Fast graphical simulations of spills and plumes for applications to the Great Lakes
I. Wong, D.A. Swayne (Guelph, Ont., Canada), C.R. Murthy and D.C.L. Lam (Burlington, Ont., Canada) 161

Extreme event risk analysis for age-structured populations
S. Ferson (Setauket, NY, U.S.A.), L. Ginzberg (Stony Brook, NY, U.S.A.) and A. Silvers (Palo Alto, CA, U.S.A.) 175

An algorithm to plot Hasse diagrams on microcomputers and Calcomp plotters
E. Halfon, J. Hodson and K. Miles (Burlington, Ont., Canada) 189

VOL. 47 NOS. 3/4 15 SEPTEMBER 1989

Model goodness of fit: a multiple resolution procedure
Costanza, R. (Solomons, MD, U.S.A.) 199
Application of a diffusion model to the spread of an invasive species: the coypu in Great Britain
Reeves, S.A. and Usher, M.B. (York, Great Britain) 217
Modelling insect populations affected by pesticides with application to pesticide efficacy trials
Schaalje, G.B., Stinner, R.L. (Raleigh, NC, U.S.A.) and Johnson, D.L. (Lethbridge, Alta., Canada) 233
Fit of logspecies–logarea regression lines to nonequilibrium archipelagos: a simulation approach
Aizen, M.A. (Buenos Aires, Argentina) 265
Pansystems modelling in ecology
Cheng, Z.B. (Columbus, OH, U.S.A.) 275
Lotka-Volterra prey-predator model with harvesting and environmental perturbations
Saha Ray, S. and Chaudhuri, K.S. (Calcutta, India) 283
Analysis of mathematical principles in crop growth simulation models
Racsko, P. (Budapest, Hungary) and Semenov, M. (Moscow, U.S.S.R.) 291
Herbage production of a Mediterranean grassland in relation to soil depth, rainfall and nitrogen nutrition: a simulation study
Seligman, N.G. (Bet Dagan, Israel) and H. van Keulen (Wageningen, The Netherlands) 303

Book Reviews
Rist management and hazardous waste 313
Climate shocks: natural and anthropogenic 314

Announcement 317

Author Index 319